USS *Saratoga*: A Gallant Ship

By Norman Polmar

Saratoga heads for the Pacific a final time in May 1945 after receiving repairs at Puget Sound. Fourteen months later, she would serve as a target in the atomic tests at Bikini Atoll.

Of the eight U.S. aircraft carriers placed in service prior to 7 December 1941, the longest-serving as a carrier was USS *Saratoga* (CV 3). She was placed in commission in 1927 and after a career of two decades the "Sara" had the dubious distinction of being the only carrier sunk by an atomic bomb. *Saratoga* and sister ship USS *Lexington* (CV 2) were the world's largest aircraft carriers until late in World War II and the "Sara" was the world's fastest capital ship of her era, reaching 34.99 knots.

Shortly before the United States' entry into World War I, Congress authorized the construction of six large battle cruisers—each to be 35,300-ton, 874-foot warships mounting 10 14-inch guns. Massive turboelectric machinery, with exhaust gases carried away by seven funnels, was to drive the ships at 35 knots. None of the six ships had commenced construction before hostilities ceased in November 1918, and none had been launched when construction was halted on 8 February 1922, in accordance with the terms of the Washington Naval Treaty. The treaty, however, permitted two capital ships to be converted to aircraft carriers. On 1 July 1922, Congress authorized the completion of the battlecruisers *Lexington* (33.8 percent complete) and *Saratoga* (35.4 percent) as carriers. Their four unfinished sister ships were scrapped on the building ways.

"Lex" and "Sara" each measured 888 feet overall in length and had an official standard displacement of 33,000 tons. In reality, each displaced some 3,000 tons more as the Navy Department claimed that additional tonnage was allowed under a provision of the Washington treaty that did not count weight for defenses against air and submarine attacks. At full load, *Saratoga* eventually displaced some 41,000 tons. The carriers had turboelectric propulsion designed to produce 180,000 horsepower, or six times that of a contemporary battleship. This type of propulsion was larger, heavier, and more expensive than an equivalent steam turbine plant. Still, turboelectric drive permitted more compartmentalization for damage control and was, in theory, more resistant to damage. In practice, however, turboelectric drive was highly vulnerable to electrical short circuits from battle damage. The "Lex" and "Sara" were the world's largest warships built with electric propulsion during the 20th century. The carriers' design speed was 33.25 knots, but both ships exceeded that figure. *Lexington* once attained a speed of 34.5 knots for one hour; *Saratoga* exceeded that speed by almost half a knot.

At first it was proposed to leave the flight decks of the huge carriers unobstructed by superstructures, but after wind tests with ship models it was decided to have their control stations, funnels, and guns combined into massive island structures on the starboard side of each ship's flight deck. These structures stretched almost one-third the length of the ship and included a funnel to carry away exhaust gases from the ship's 16 boilers, venting the gases high above the flight deck where they would not interfere with landing operations.

As completed, "Lex" and "Sara" each had a main battery of eight 8-inch guns arranged in twin turrets, two forward and two abaft the island structure. These were to defend the carriers should they be attacked by enemy cruisers when their aircraft were off on missions. Each carrier also had a dozen 5-inch anti-aircraft guns in galleries along the edge of the flight deck, plus several machine guns.

Both carriers were completed in 1927, late and over cost. Initially, they were each assigned 83 aircraft: 36 fighters, 32 bombers, 12 observation planes, and three utility aircraft. Although the squadrons were collectively referred to as the *Lexington* Air Group and *Saratoga* Air Group, there were no air group commanders. Instead, the squadrons were commanded by the carrier commanding officer, with the senior squadron commander aloft taking charge of a given formation.

Rear Adm. Joseph M. Reeves, the Navy's first carrier division commander, was dissatisfied with the number of aircraft embarked. Soon after the two ships came under his command, he set to work to increase their capacities. More planes were brought aboard *Lexington* until the ship could put to sea with 120 fighters and bombers. He also considered a plan whereby each of his three carriers—*Lexington*, *Saratoga*, and USS *Langley* (CV 1)—would handle only one type of plane (i.e., fighter, scout-dive bomber, or torpedo bomber). This would avoid the delay of reshuffling planes on the flight deck to have a certain type ready to launch. A series of trials convinced him that the "Sara" could embark 200 fighters. Reeves ultimately decided against such an arrangement, however, because the loss of one carrier would deprive the fleet of all of its aircraft of one type.

The "Sara" participated in fleet exercises in the 1930s, usually conducting simulated air attacks against Pearl Harbor and the Panama Canal. When six Japanese carriers attacked Pearl Harbor on 7 December 1941, *Saratoga* was on the West Coast. She arrived at San Diego's North Island Naval Air Station on the morning of 7 December and departed the next morning for Pearl Harbor. As she loaded her aircraft, the Army provided fighter aircraft over San Diego in the event the Japanese carriers attacked the West Coast. Besides 66 aircraft of her air group, the "Sara" carried 14 F2A Buffalo fighters of a Marine squadron, and 23 cargo and training planes.

Saratoga arrived off Pearl Harbor on 14 December, but because of a submarine scare she did not enter the harbor until the following morning. On the afternoon of the 15th the big carrier left the harbor and headed for Wake Island, where the small Marine garrison was being besieged by the Japanese. Accompanied by a seaplane tender, an oiler, and destroyers, the force's progress was excruciatingly slow (about 12 knots) because of the oiler and the need to zig-zag because of the submarine threat. Wake was being bombed almost daily by Japanese twin-engine bombers from Kwajalein Atoll, but reports soon arrived that carrier planes began bombing the island as well. With no knowledge of the strength or location of the new Japanese force (the planes came from the carriers *Hiryu* and *Soryu*) the *Saratoga* task force was ordered to turn back approximately 425 miles from the island, sealing the fate of the Marines and Sailors on Wake.

Subsequently, the "Sara" operated in a defensive posture in the Hawaiian area until 11 January 1942, when she was struck by a torpedo from the Japanese submarine *I-16*, about 500 miles southwest of Oahu. Six men were killed in the explosion and three of the ship's 16 firerooms were flooded. The "Sara" limped back to Pearl Harbor under her own power and then proceeded to Bremerton, Wash., for repairs and modernization. She would be out of service for five critical months. The I-boat escaped.

While at Bremerton, *Saratoga* missed participating in the Doolittle raid on Tokyo and the Battle of Coral Sea, in which the carriers *Lexington* and USS *Yorktown* (CV 5) took part in history's first carrier-versus-carrier battle. When the decisive Battle of Midway was fought in early June 1942, *Saratoga* was racing from the West Coast but arrived too late for the battle.

Saratoga *in dry dock at San Francisco less than a year after commissioning in 1927. (Photo from San Francisco Maritime National Historic Park Collection)*

Saratoga, along with two other carriers, participated in the landings at Guadalcanal in August 1942, the first U.S. offensive of the war. Later that month the "Sara" was a key player in the Battle of the Eastern Solomons, when her planes sank the Japanese light carrier *Ryujo*. Retribution came on the morning of 31 August when the Japanese submarine *I-26* torpedoed *Saratoga*. The submarine had been detected moments before firing six torpedoes at the carrier, and she actually brushed against a U.S. destroyer. After hitting the "Sara," *I-26* successfully evaded several destroyers that tried to sink her.

The torpedo blast injured 12 men, including Vice Adm. Frank Jack Fletcher, and damaged the ship's turboelectric propulsion system. The carrier was in no danger of sinking, but her speed was reduced considerably and she would require three months in a shipyard before she could return to the battle line. Most of her fighters and bombers flew ashore and were later sent on to Guadalcanal to join the Marine and Navy planes at Henderson Field. It was the second time in eight months that the "Sara" had been torpedoed by a submarine.

Saratoga returned to the war in the summer of 1943 when she and the British fleet carrier HMS *Victorious* operated together. The "Sara" was the only U.S. large carrier in the Southwest Pacific. The two ships worked well together and even swapped aircraft at times. They carried out raids against Japanese bases in the Solomons Islands in May-July 1943, encountering no major opposition from enemy ships or aircraft. During those operations *Saratoga* would operate all bomber aircraft—including Royal Navy Fleet Air Arm No. 832 Squadron flying Avengers—while *Victorious* operated the 60 U.S. and British F4F / FM Wildcat fighters. To avoid confusion among the many U.S. ships in the area, the British aircraft had U.S. insignia.

The "Sara" then joined the growing fleet of U.S. carriers in operations against the Japanese in the Central Pacific. In late 1943, she took part in the Tarawa invasion and the Marshall Islands campaign. *Saratoga* then left the main Pacific conflict for almost a year to support British operations against the Japanese in the Indian Ocean and Southwest Pacific. In August 1944, she became a "night carrier," first for training pilots and then in combat in early 1945. In February 1945, her night-flying aircraft supported the landings on Iwo Jima. On the third day of the landings, Japanese planes scored several bomb hits, starting large fires. The ship suffered 123 men dead and missing. She withdrew to Bremerton for repairs.

By late May 1945, "Sara" was again in Hawaiian waters serving as a training carrier, a role she filled until the end of the war in the Pacific. On 9 September, she began participating in

Several Boeing F4B-4 fighters with VF-68 prepare to take-off over Saratoga*'s stern during a training exercise in May 1934.*

On 21 February 1945, six Japanese planes scored five hits on Saratoga *in three minutes during the landings at Iwo Jima. The attack put the ship out of action for three months.*

Operation Magic Carpet, eventually returning 29,204 war veterans back to the United States—more than any other ship.

With peace there was little need for the veteran "Sara." The carrier force now consisted of a score of fleet carriers of the new *Essex* class, almost a dozen light carriers built and building, more than 60 escort carriers, and the first of the new *Midway* class, ships even larger than *Saratoga*.

In July 1946 at Bikini Atoll in the Pacific, the United States detonated the world's fourth and fifth atomic bombs in tests to evaluate their effect against warships. *Saratoga* was anchored in the Bikini lagoon with scores of mostly American ships, but also the Japanese battleship *Nagato* and cruiser *Sakawa*, and the German cruiser *Prinz Eugen*. The "Sara" survived the air-dropped atomic bomb on 1 July with only minor damage.

For the second test the atomic bomb was suspended 90 feet beneath an LSM landing ship moored in the lagoon. At 0835 on the morning of 25 July the bomb was detonated, sending a spectacular column of water 6,000 feet into the air. Then a wall of spray and steam rushed out from the base of the column to envelop the target ships. When the spray and steam dissipated there was no question that the gallant *Saratoga* was dying. She had been moored only 500 feet from the landing ship under which the bomb had been suspended. *Saratoga*'s distinctive funnel had collapsed across her flight deck, all tied-down aircraft and equipment on her deck had been swept away, and the ship listed heavily to starboard. Tugs were directed to secure lines to her and to beach her if possible. This effort was halted because the carrier and the water around her were too radioactive to permit safe approach. Slowly the "Sara" sank, disappearing beneath the surface of the lagoon 7½ hours after the explosion. Thus died a gallant ship.

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